

ABSTRACT OF THE DISCLOSURE

A system and method for generating a test case operable to test a circuit design using a plurality of threads. In one embodiment, a test code and state initialization engine, responsive to a random number sequence and a probability profile, generates test code. A distribution settings engine generates default distribution settings that specify a magnitude of at least one simulation parameter for each thread based on a default probability distribution profile. A knob-setting interface is included for optionally differentiating the default distribution settings. The optionally differentiated distribution settings are then associated with the test code in order to generate the test case that exercises a circuit design model of the circuit design.